



**A. PIP Heavy chain variable region**

gatgtgcagcttcaggagtcaggacctgacctggtgaaaccttctcagtcagtttactcacctgcactgtcactggctactccatc  
accagtgggtatggctggcactggatccggcagtttccaggaaataaactggatggatgggctgcatacactacagtggtagc  
actaactacaacctatctctcaaaagtcgaatctctgtcactcgagacacatccaagaaccagttcttctgcagttgaattctgtga  
ctactgaggacacagccacatattactgtgcaagaagggaatatggttaactatgctatggactactggggtcaaggaacctcagt  
caccgtctctcag (SEQ ID NO:2)

DVQLQESGPDLVKPSQSVSLTCTVTGYISITSGYGWHWIRQFPGNKLEWMGCIHY  
SGSTNYNPSLKSRSISVTRDTSKNQFFLQLNSVTTEDTATYYCARREYGNYAMDY  
WGQGTSTVTSS (SEQ ID NO:3)

**B. PIP Heavy chain native signal sequence**

atgagagtgtgattctttgtgcctgttcacagccttctgtatcctgtct (SEQ ID NO:4)

MRVLILLCLFTAFPGILS (SEQ ID NO:5)

**C. PIP Light chain variable region**

gacattgtgatgacacagctctccatcctcctgagtggtgcagcaggagagaaggctactatgagctgcaagtccagtcagagtc  
tgtaaacagtggaaatcaaaagaactacttgccctggtagcagcagaaaccaggcagcctcctaaactgtgatctacgggg  
catccactaggggaatctggggtccctgatcgcttcacaggcagtgatctggaaccgatttactcttaccatcagcagtggtgcag  
gctgaagacctggcagtttattactgtcagaatgatcatagttatccattcacgttcgggtcggggacaaagttggaattaaaac  
(SEQ ID NO:6)

DVQLQESGPDLVKPSQSVSLTCTVTGYISITSGYGWHWIRQFPGNKLEWMGCIHY  
SGSTNYNPSLKSRSISVTRDTSKNQFFLQLNSVTTEDTATYYCARREYGNYAMDY  
WGQGTSTVTSS (SEQ ID NO:7)

**D. PIP Light chain native signal sequence**

atggaatcacagactcaggctctatctccttgctgttctgggtatctggtacctgtggg (SEQ ID NO:8)

MESQTQVLISLLFWVSGTCG (SEQ ID NO:9)

**FIGURE 4**